

(19) World Intellectual Property  
Organization  
International Bureau



(43) International Publication Date  
12 May 2005 (12.05.2005)

PCT

(10) International Publication Number  
**WO 2005/042155 A3**

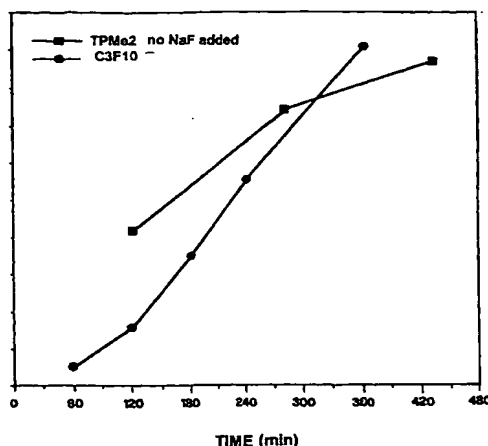
- (51) International Patent Classification<sup>7</sup>: **B01J 37/03**, 23/46, C07C 45/38, 45/39
- (21) International Application Number: PCT/TB2004/052230
- (22) International Filing Date: 28 October 2004 (28.10.2004)
- (25) Filing Language: Italian
- (26) Publication Language: English
- (30) Priority Data: RM2003A000502 29 October 2003 (29.10.2003) IT
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- (81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.
- (84) Designated States (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

**Published:**

- with international search report
- before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments

[Continued on next page]

(54) Title: AEROBIC CATALYSTS FOR ALCOHOL OXIDATION IN ORGANIC SOLVENTS AND IN SUPERCRITICAL CARBON DIOXIDE, PROCESS FOR THE PRODUCTION THEREOF AND THEIR USE IN OXIDATIVE CONVERSIONS



Aerobic benzyl alcohol oxidation to benzaldehyde in  $scCO_2$  on TPAP trapped in C3-F-10 10% propyl-fluorinated silicium oxide matrices (rounded points) and 50% methylated TPAP-Me2 (square points)

(57) Abstract: Nanohybrid sol-gel materials, based on silica (ormosil) and doped with the ruthenium species tetra-*n*-propylammonium perruthenate (TPAP) are highly efficient catalysts for the selective oxidation of alcohols to carbonyls with oxygen at low pressure, in organic solvents as well as in carbon dioxide in supercritical state are described. Optimal conditions for the preparation and use thereof in liquid-phase as well as in supercritical  $CO_2$  were set by studying the structure-activity relationships of the materials, with particular reference to the surface hydrophobic/hydrophilic properties and to the textural ones.



(88) Date of publication of the international search report:  
25 August 2005

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